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Search Results -

Terms	Documents
l2 and transgenic	4

Database: US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

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Search History

Today's Date: 1/8/2002

DB Name	Query	Hit Count	Set Name
USPT	l2 and transgenic	4	L10
USPT	wound induced protein kinase	0	L9
USPT	(sipk or sip) and pseudomonas	54	L8
USPT	l1 and pseudomonas	1	L7
USPT	l1 and phytophthora	0	L6
USPT	l1 and phytopthora	0	L5
USPT	l2 and salicylic	2	L4
USPT	l2 and (wound or disease)	6	L3
USPT	l1 and plant	57	L2
USPT	wipk or wip	270	L1

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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2	Dec 17	The CA Lexicon available in the CAPLUS and CA files
NEWS 3	Feb 06	Engineering Information Encompass files have new names
NEWS 4	Feb 16	TOXLINE no longer being updated
NEWS 5	Apr 23	Search Derwent WPINDEX by chemical structure
NEWS 6	Apr 23	PRE-1967 REFERENCES NOW SEARCHABLE IN CAPLUS AND CA
NEWS 7	May 07	DGENE Reload
NEWS 8	Jun 20	Published patent applications (A1) are now in USPATFULL
NEWS 9	JUL 13	New SDI alert frequency now available in Derwent's DWPI and DPCI
NEWS 10	Aug 23	In-process records and more frequent updates now in MEDLINE
NEWS 11	Aug 23	PAGE IMAGES FOR 1947-1966 RECORDS IN CAPLUS AND CA
NEWS 12	Aug 23	Adis Newsletters (ADISNEWS) now available on STN
NEWS 13	Sep 17	IMSworld Pharmaceutical Company Directory name change to PHARMASEARCH
NEWS 14	Oct 09	Korean abstracts now included in Derwent World Patents Index
NEWS 15	Oct 09	Number of Derwent World Patents Index updates increased
NEWS 16	Oct 15	Calculated properties now in the REGISTRY/ZREGISTRY File
NEWS 17	Oct 22	Over 1 million reactions added to CASREACT
NEWS 18	Oct 22	DGENE GETSIM has been improved
NEWS 19	Oct 29	AAASD no longer available
NEWS 20	Nov 19	New Search Capabilities USPATFULL and USPAT2
NEWS 21	Nov 19	TOXCENTER(SM) - new toxicology file now available on STN
NEWS 22	Nov 29	COPPERLIT now available on STN
NEWS 23	Nov 29	DWPI revisions to NTIS and US Provisional Numbers
NEWS 24	Nov 30	Files VETU and VETB to have open access
NEWS 25	Dec 10	WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
NEWS 26	Dec 10	DGENE BLAST Homology Search
NEWS 27	Dec 17	WELDASEARCH now available on STN
NEWS 28	Dec 17	STANDARDS now available on STN
NEWS 29	Dec 17	New fields for DPCI
NEWS 30	Dec 19	CAS Roles modified
NEWS 31	Dec 19	1907-1946 data and page images added to CA and CAplus

NEWS EXPRESS	August 15 CURRENT WINDOWS VERSION IS V6.0c, CURRENT MACINTOSH VERSION IS V6.0 (ENG) AND V6.0J (JP), AND CURRENT DISCOVER FILE IS DATED 07 AUGUST 2001
NEWS HOURS	STN Operating Hours Plus Help Desk Availability
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FILE 'HOME' ENTERED AT 15:10:07 ON 08 JAN 2002

=> file agricola caplus biosis
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FILE 'AGRICOLA' ENTERED AT 15:10:28 ON 08 JAN 2002

FILE 'CAPLUS' ENTERED AT 15:10:28 ON 08 JAN 2002
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FILE 'BIOSIS' ENTERED AT 15:10:28 ON 08 JAN 2002
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=> s wipk or wound inducible protein kinase
L1 42 WIPK OR WOUND INDUCIBLE PROTEIN KINASE

=> s l1 (gene or cdna or coding region)
MISSING OPERATOR 'L4 (GENE'
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l1 and (gene or cdna or coding region)
L2 27 L1 AND (GENE OR CDNA OR CODING REGION)

=> dup rem l1
PROCESSING COMPLETED FOR L1
L3 23 DUP REM L1 (19 DUPLICATES REMOVED)

=> d 1-10 ti

L3 ANSWER 1 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
TI Calcium-dependent protein kinases play an essential role in a plant defence response

L3 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
TI Activation of salicylic acid-induced protein kinase, a mitogen-activated protein kinase, induces multiple defense responses in tobacco

L3 ANSWER 3 OF 23 AGRICOLA DUPLICATE 3
TI Activation of a mitogen-activated protein kinase pathway is involved in disease resistance in tobacco.

L3 ANSWER 4 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4
TI Transient accumulation of jasmonic acid during the synchronized hypersensitive cell death in Tobacco mosaic virus-infected tobacco leaves

L3 ANSWER 5 OF 23 BIOSIS COPYRIGHT 2002 BIOSIS
TI Activation of **WIPK** preceding accumulation of jasmonic acid during the hypersensitive reaction in TMV-infected tobacco.

L3 ANSWER 6 OF 23 BIOSIS COPYRIGHT 2002 BIOSIS
TI Promoter analysis of **WIPK**: A tobacco wound induced MAP kinase.

L3 ANSWER 7 OF 23 CAPLUS COPYRIGHT 2002 ACS
TI Signaling pathways for TMV- and wound-induced resistance in tobacco plants

L3 ANSWER 8 OF 23 CAPLUS COPYRIGHT 2002 ACS
TI Molecular cloning and cultivar specific expression of MAP kinases from Capsicum annuum

L3 ANSWER 9 OF 23 BIOSIS COPYRIGHT 2002 BIOSIS
TI Antisense expression of an Arabidopsis plastid omega-3 fatty acid desaturase gene enhances the necrotic lesion formation by TMV infection in transgenic tobacco plants.

L3 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
TI Differential induction of tobacco MAP kinases by the defense signals nitric oxide, salicylic acid, ethylene, and jasmonic acid

=> d 2 ab

L3 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
AB The activation of mitogen-activated protein kinases (MAPKs) is one of the earliest responses in plants challenged by avirulent pathogens or cells treated with pathogen-derived elicitors. Expression of a constitutively active MAPK kinase, NtMEK2DD, in tobacco induces the expression of defense genes and hypersensitive response-like cell death, which are preceded by the activation of two endogenous MAPKs, salicylic acid-induced protein kinase (SIPK) and wounding-induced protein kinase (**WIPK**). However, the roles that SIPK and **WIPK** each play in the process are unknown. Here we report that SIPK alone is sufficient to activate these defense responses. In tobacco leaves transiently transformed with SIPK under the control of a steroid-inducible promoter, the induction of SIPK expression after the application of dexamethasone, a steroid, leads to an increase of SIPK activity. The increase of SIPK activity is dependent on the phosphorylation of newly synthesized SIPK by its endogenous upstream kinase. In contrast, the expression of **WIPK** under the same conditions fails to increase its activity, even though the protein accumulates to a similar level. Studies using chimeras of SIPK and **WIPK** demonstrated that the C terminus of SIPK contains the mol. determinant for its activation, which is rather surprising because the N termini of SIPK and **WIPK** are more divergent. SIPK has been implicated previously in the regulation of both plant defense gene activation and hypersensitive response-like cell death based on evidence from pharmacol. studies using kinase inhibitors. This gain-of-function study provided more direct evidence for its role in the signaling of multiple defense responses in tobacco.

=> d 2 so

L3 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
SO Plant Cell (2001), 13(8), 1877-1889
CODEN: PLCEEW; ISSN: 1040-4651

=> d 2 au

L3 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
AU Zhang, Shuqun; Liu, Yidong

=> d 3 ab

L3 ANSWER 3 OF 23 AGRICOLA DUPLICATE 3

AB Hypersensitive response (HR), a form of programmed cell death, is frequently associated with plant disease resistance. It has been proposed that mitogen-activated protein kinase (MAPK) cascades regulate HR cell death based on pharmacological studies by using kinase inhibitors. However, direct evidence is lacking. Here, we demonstrate that NtMEK2, a MAPK kinase, is upstream of salicylic acid-induced protein kinase (SIPK) and wounding-induced protein kinase (**WIPK**), two tobacco MAPKs that are activated by various pathogens or pathogen-derived elicitors. Expression of a constitutively active mutant of NtMEK2 induces HR-like cell death in tobacco, which is preceded by the activation of endogenous SIPK and **WIPK**. In addition, NtMEK2-SIPK/**WIPK** cascade appears to control the expression of 3-hydroxy-3-methylglutaryl CoA reductase (HMGR) and L-phenylalanine ammonia lyase (PAL), two defense genes encoding key enzymes in the phytoalexin and salicylic acid biosynthesis pathways. These results demonstrate that a plant MAPK cascade controls multiple defense responses against pathogen invasion.

=> d 4 ab

L3 ANSWER 4 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4
AB Jasmonic acid (JA) transiently accumulated during temp.-dependent synchronous necrotic lesion formation in Tobacco mosaic virus-infected tobacco leaves. The accumulation of JA was preceded by activation of a tobacco mitogen-activated protein kinase, **WIPK**, which functions upstream of JA in wound signal transduction pathways.

=> d 5 ab

L3 ANSWER 5 OF 23 BIOSIS COPYRIGHT 2002 BIOSIS

=> d 5 so

L3 ANSWER 5 OF 23 BIOSIS COPYRIGHT 2002 BIOSIS
SO Plant and Cell Physiology, (2001) Vol. 42, No. Supplement, pp. s146. print.
Meeting Info.: Symposia and Workshops of the 2001 Annual Meeting of the Japanese Society of Plant Physiologists Fukuoka, Japan March 23-26, 2001 Japanese Society of Plant Physiologists
. ISSN: 0032-0781.

=> d 6 ab

L3 ANSWER 6 OF 23 BIOSIS COPYRIGHT 2002 BIOSIS

=> d 7 ab

L3 ANSWER 7 OF 23 CAPLUS COPYRIGHT 2002 ACS
AB A review, with 12 refs., on the signaling for induction of tobacco mosaic virus- and wound-induced resistance in plants. The resistance responses against pathogen infection and wounding in plants constitute complex signaling networks. Activation of wound-induced protein kinase (**WIPK**) is required for salicylic acid (SA) and acidic pathogenesis related (PR) gene expression in the **WIPK**-silenced plants. As a novel endogenous signal compd., spermine was proposed to regulate PR gene expression in a SA-independent manner.

=> d 7 so

L3 ANSWER 7 OF 23 CAPLUS COPYRIGHT 2002 ACS
SO Delivery Percept. Pathog. Signals Plants, [Pap. Jpn.-US Semin.], 8th (2001), Meeting Date 1999, 122-130. Editor(s): Keen, Noel T. Publisher: APS Press, St. Paul, Minn.
CODEN: 69BOPV

=> d 10 ab

L3 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
AB In tobacco, two mitogen-activated protein (MAP) kinases, designated salicylic acid (SA)-induced protein kinase (SIPK) and wounding-induced protein kinase (**WIPK**) are activated in a disease resistance-specific manner following pathogen infection or elicitor treatment. To investigate whether nitric oxide (NO), SA, ethylene, or jasmonic acid (JA) are involved in this phenomenon, the ability of these defense signals to activate these kinases was assessed. Both NO and SA activated SIPK; however, they did not activate **WIPK**. Addnl. analyses with transgenic NahG tobacco revealed that SA is required for the NO-mediated induction of SIPK. Neither JA nor ethylene activated SIPK or **WIPK**. Thus, SIPK may function downstream of SA in the NO signaling pathway for defense responses, while the signals responsible for resistance-assocd. **WIPK** activation have yet to be detd.

=> d 10 so

L3 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
SO Mol. Plant-Microbe Interact. (2000), 13(3), 347-351
CODEN: MPMIEL; ISSN: 0894-0282

=> d 10 au

L3 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
AU Kumar, Dhirendra; Klessig, Daniel F.

=> d 11-23 ti

L3 ANSWER 11 OF 23 AGRICOLA DUPLICATE 6
TI Multiple levels of tobacco **WIPK** activation during the induction of cell death by fungal elicitins.

L3 ANSWER 12 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 7
TI A non-toxic pokeweed antiviral protein mutant inhibits pathogen infection via a novel salicylic acid-independent pathway

L3 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 8
TI Protein kinases induced by osmotic stresses and elicitor molecules in tobacco cell suspensions: two crossroad MAP kinases and one osmoregulation-specific protein kinase

L3 ANSWER 14 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 9
TI Possible involvement of protein phosphorylation in the wound-responsive expression of Arabidopsis plastid .omega.-3 fatty acid desaturase gene

L3 ANSWER 15 OF 23 AGRICOLA DUPLICATE 10
TI Molecular cloning and characterization of a tobacco MAP kinase kinase that interacts with SIPK.

L3 ANSWER 16 OF 23 CAPLUS COPYRIGHT 2002 ACS
TI Pathogen-induced MAP kinases in tobacco

L3 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2002 ACS
TI Early signalling events in the Avr9/Cf-9-dependent plant defense response

L3 ANSWER 18 OF 23 CAPLUS COPYRIGHT 2002 ACS
TI Pathogen-activatable MAP kinase **WIPK** to enhance disease resistance in plants

L3 ANSWER 19 OF 23 CAPLUS COPYRIGHT 2002 ACS
TI Wound-responsive protein kinases in plant

L3 ANSWER 20 OF 23 AGRICOLA DUPLICATE 11
TI Jasmonate-based wound signal transduction requires activation of **WIPK**, a tobacco mitogen-activated protein kinase.

L3 ANSWER 21 OF 23 AGRICOLA DUPLICATE 12
TI Rapid Avr9- and Cf-9-dependent activation of MAP kinases in tobacco cell cultures and leaves: convergence of resistance gene, elicitor, wound, and salicylate responses.

L3 ANSWER 22 OF 23 AGRICOLA DUPLICATE 13
TI Resistance gene N-mediated de novo synthesis and activation of a tobacco mitogen-activated protein kinase by tobacco mosaic virus infection.

L3 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2002 ACS
TI Cloning of cDNA for tobacco mitogen-activated protein (MAP) kinase that is a possible mediator in wound signal transduction pathways

=> d 11 ab

L3 ANSWER 11 OF 23 AGRICOLA DUPLICATE 6

=> d 11 so

L3 ANSWER 11 OF 23 AGRICOLA DUPLICATE 6
SO The Plant journal : for cell and molecular biology, Aug 2000. Vol. 23, No. 3. p. 339-347
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412

=> d 13 ab

L3 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 8
AB Two protein kinases displaying mitogen-activated protein kinase (MAPK) properties are activated both by an hypoosmotic stress and by oligogalacturonides in tobacco cell suspensions . Using specific antibodies, they were identified as the salicylic acid-induced protein kinase (SIPK) and wound-induced protein kinase (**WIPK**). The SIPK was also activated by an hyperosmotic stress, indicating that the same kinase may play a role both in hypo- and hyperosmotic signalling pathways, in addn. to its involvement in the transduction of elicitor signals. Using immunopptn. followed by two-dimensional in-gel kinase assay, three mol. forms of the SIPK were obsd., suggesting that addnl. modifications of the activated kinase may occur. In contrast to **WIPK** and SIPK, which are located at the crossroad of several transduction pathways initiated by elicitor or osmotic stimuli, a 44 kDa kinase, that would not belong to the MAPK family, appeared more specific to osmotic stress.

=> d 16 ab

L3 ANSWER 16 OF 23 CAPLUS COPYRIGHT 2002 ACS

AB A review with 71 refs. The activation of two tobacco MAP kinases, SIPK and **WIPK**, by a variety of pathogen-assocd. stimuli and other stresses have been analyzed (Table 1). SIPK was activated by SA, a CWD carbohydrate elicitor and two elicitins from Phytophthora spp, bacterial harpin, TMV, and Avr9 from Cladosporium fulvum. In addn. to these pathogen-assocd. stimuli, wounding also activated SIPK, suggesting that this enzyme is involved in multiple signal transduction pathways. In all cases tested, SIPK activation was exclusively post-translational via tyrosine and threonine/serine phosphorylation. **WIPK** was activated by only a subset of these stimuli, including infection by TMV or harpin-producing Pseudomonas syringae and treatment with the CWD elicitor, elicitins or Avr9. In contrast to SIPK, **WIPK** was activated at multiple levels. Low level activation (e.g. by the CWD elicitor) appeared to be primarily post-translational whereas dramatic increases in kinase activity (e.g. by TMV or elicitins) required not only post-translational phosphorylation, but also preceding rises in mRNA levels and de novo synthesis of **WIPK** protein. Interestingly, under conditions where the same stimulus activated both of these kinases, their kinetics of activation appeared to be distinct. SIPK was the first to be activated. Activation of the low basal level of **WIPK** protein present before treatment exhibited similar kinetics to that of SIPK; however, the appearance of high levels of **WIPK** enzyme activity was delayed, perhaps reflecting the need for **WIPK** transcription and de novo protein synthesis.

=> d 16 so

L3 ANSWER 16 OF 23 CAPLUS COPYRIGHT 2002 ACS
SO Results Probl. Cell Differ. (2000), 27(MAP Kinases in Plant Signal Transduction), 65-84
CODEN: RCLDAT; ISSN: 0080-1844

=> d 18 pi

L3 ANSWER 18 OF 23 CAPLUS COPYRIGHT 2002 ACS

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9943796	A1	19990902	WO 1999-US3882	19990223

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9927819	A1	19990915	AU 1999-27819	19990223

=> d 19 ab

L3 ANSWER 19 OF 23 CAPLUS COPYRIGHT 2002 ACS
AB A review with 27 refs. on response of WIP kinase (**wound-inducible protein kinase**), SIP kinase (salicylic acid-induced protein kinase), MBP kinase, MEK1 kinase, WAP kinase, and PMSAP kinase to wound, and difference between plant and animal in response to wound.

=> d 19 so

L3 ANSWER 19 OF 23 CAPLUS COPYRIGHT 2002 ACS
SO Tanpakushitsu Kakusan Koso (1999), 44(15, Zokan), 2360-2365
CODEN: TAKKAJ; ISSN: 0039-9450

=> d 22 ab

L3 ANSWER 22 OF 23 AGRICOLA DUPLICATE 13
AB Salicylic acid-induced protein kinase (SIPK) and wounding-induced protein kinase (**WIPK**), two distinct members of the mitogen-activated protein (MAP) kinase family, are activated in tobacco resisting infection by tobacco mosaic virus (TMV). **WIPK** activation by TMV depends on the disease-resistance gene N because infection of susceptible tobacco not carrying the N gene failed to activate **WIPK**. Activation of **WIPK** required not only posttranslational phosphorylation but also a preceding rise in its mRNA and de novo synthesis of **WIPK** protein. The induction by TMV of **WIPK** mRNA and protein also occurred systemically. Its activation at the mRNA, protein, and enzyme levels was independent of salicylic acid. The regulation of **WIPK** at multiple levels by an N gene-mediated signal(s) suggests that this MAP kinase may be an important component upstream of salicylic acid in the signal-transduction pathway(s) leading to local and systemic resistance to TMV.

=> d 22 so

L3 ANSWER 22 OF 23 AGRICOLA DUPLICATE 13
SO Proceedings of the National Academy of Sciences of the United States of America, June 23, 1998. Vol. 95, No. 13. p. 7433-7438
Publisher: Washington, D.C. : National Academy of Sciences,
CODEN: PNASA6; ISSN: 0027-8424

=> d 22 au

L3 ANSWER 22 OF 23 AGRICOLA DUPLICATE 13
AU Zhang, S.; Klessig, D.F.

=> d 23 ab

L3 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2002 ACS
AB The cDNA encoding a MAP kinase was isolated from tobacco plants infected with TMV. Clones DS22 and DS18 encode 2 MAP kinases with 375 and 423 amino acids, resp. The 375-amino acid MAP kinase was also named wound-induced protein kinase (**WIPK**). Insect resistance can be conveyed by regulating the expression of **WIPK** in transgenic plants.

=> d 23 ab

L3 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2002 ACS
AB The cDNA encoding a MAP kinase was isolated from tobacco plants infected with TMV. Clones DS22 and DS18 encode 2 MAP kinases with 375 and 423 amino acids, resp. The 375-amino acid MAP kinase was also named wound-induced protein kinase (**WIPK**). Insect resistance can be conveyed by regulating the expression of **WIPK** in transgenic plants.

=> d 23 so

L3 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2002 ACS
SO Jpn. Kokai Tokkyo Koho, 21 pp.
    CODEN: JKXXAF

=> d 23 pi

L3 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2002 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09065881	A2	19970311	JP 1995-220935	19950829
	JP 2945953	B2	19990906		

=> dis his

    (FILE 'HOME' ENTERED AT 15:10:07 ON 08 JAN 2002)

    FILE 'AGRICOLA, CAPLUS, BIOSIS' ENTERED AT 15:10:28 ON 08 JAN 2002
L1   42 S WIPK OR WOUND INDUCIBLE PROTEIN KINASE
L2   27 S L1 AND (GENE OR CDNA OR CODING REGION)
L3   23 DUP REM L1 (19 DUPLICATES REMOVED)

=> s l1 and transgenic
L4   17 L1 AND TRANSGENIC

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5   10 DUP REM L4 (7 DUPLICATES REMOVED)

=> d 1-10 ti

L5 ANSWER 1 OF 10 BIOSIS COPYRIGHT 2002 BIOSIS
TI Promoter analysis of **WIPK**: A tobacco wound induced MAP kinase.

L5 ANSWER 2 OF 10 BIOSIS COPYRIGHT 2002 BIOSIS
TI Antisense expression of an Arabidopsis plastid omega-3 fatty acid
    desaturase gene enhances the necrotic lesion formation by TMV infection in
    transgenic tobacco plants.

L5 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2002 ACS   DUPLICATE 1
TI Differential induction of tobacco MAP kinases by the defense signals
    nitric oxide, salicylic acid, ethylene, and jasmonic acid

L5 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2002 ACS   DUPLICATE 2
TI A non-toxic pokeweed antiviral protein mutant inhibits pathogen infection
    via a novel salicylic acid-independent pathway

L5 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS   DUPLICATE 3
TI Possible involvement of protein phosphorylation in the wound-responsive
    expression of Arabidopsis plastid .omega.-3 fatty acid desaturase gene

L5 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Early signalling events in the Avr9/Cf-9-dependent plant defense response

L5 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Pathogen-activatable MAP kinase **WIPK** to enhance disease
    resistance in plants

L5 ANSWER 8 OF 10 AGRICOLA   DUPLICATE 4
TI Jasmonate-based wound signal transduction requires activation of
    WIPK, a tobacco mitogen-activated protein kinase.

L5 ANSWER 9 OF 10 AGRICOLA   DUPLICATE 5

TI Rapid Avr9- and Cf-9-dependent activation of MAP kinases in tobacco cell cultures and leaves: convergence of resistance gene, elicitor, wound, and salicylate responses.

L5 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Cloning of cDNA for tobacco mitogen-activated protein (MAP) kinase that is a possible mediator in wound signal transduction pathways

=> d 3 so

L5 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
SO Mol. Plant-Microbe Interact. (2000), 13(3), 347-351
CODEN: MPMIEL; ISSN: 0894-0282

=> d 7 so

L5 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS
SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2

=> d 7 pi

L5 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9943796	A1	19990902	WO 1999-US3882	19990223
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9927819	A1	19990915	AU 1999-27819	19990223

=> d 8 so

L5 ANSWER 8 OF 10 AGRICOLA DUPLICATE 4
SO The Plant cell, Feb 1999. Vol. 11, No. 2. p. 289-298
Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
CODEN: PLCEEW; ISSN: 1040-4651

=> d 9 so

L5 ANSWER 9 OF 10 AGRICOLA DUPLICATE 5
SO The Plant cell, Feb 1999. Vol. 11, No. 2. p. 273-287
Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
CODEN: PLCEEW; ISSN: 1040-4651

=> d so

L7 ANSWER 1 OF 16 AGRICOLA DUPLICATE 1
SO Planta, Mar 2002. Vol. 214, No. 5. p. 792-797
Publisher: Berlin ; New York : Springer-Verlag, 1925-
CODEN: PLANAB; ISSN: 0032-0935

=> d 2 ab

L7 ANSWER 2 OF 16 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AB Phorbol 12-myristate 13-acetate (PMA), a potent activator of protein kinases in animals, elicits the transient activation of a 45-kDa protein kinase in tobacco cell-suspension cultures. The 45-kDa protein kinase preferentially phosphorylates myelin basic protein (MBP), a general substrate for MAPK. Studies using cycloheximide indicated that protein synthesis is not required for the activation of the kinase. Treatment of tobacco cell extracts containing the activated kinase with either serine/threonine-specific or tyrosine-specific protein phosphatase abolished the kinase activity, which consequently appears to be regulated by phosphorylation. By using an immune complex kinase assay with antibodies specific for stress-responsive MAPKs, we show that the PMA-activated kinase is immunologically related to the wound-induced protein kinase (**WIPK**), and not to the salicylic acid-induced protein kinase (**SIPK**), two representative members of the tobacco MAPK family, known to be activated by extracellular stimuli. Furthermore, the activated kinase was recognized by phospho-specific MAPK antibodies. Collectively, these results indicate that phorbol ester promotes the activation of a 45-kDa protein kinase related to **WIPK** in tobacco cells. Activation of **WIPK** in response to PMA is associated with protein phosphorylation but not with an increase in protein level.

=> d so

L7 ANSWER 1 OF 16 AGRICOLA DUPLICATE 1
SO Planta, Mar 2002. Vol. 214, No. 5. p. 792-797
Publisher: Berlin ; New York : Springer-Verlag, 1925-
CODEN: PLANAB; ISSN: 0032-0935

=> d 3 ab

L7 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
AB Protein kinases play important roles in elicitor signal transduction. In this article, I describe the current view of the role of mitogen-activated protein kinase (MAPK) cascades in elicitor signal transduction of **plant** cells based on our own research and recent developments in this field. In the past several years, it has become apparent that MAPK cascades play important roles in elicitor signal transduction in **plants**. Our early studies demonstrated the identification of p47 MAPK in tobacco as an elicitor-responsive protein kinase and possible involvement of p47 MAPK in elicitor signal transduction to induce defense responses, including defense gene expression and hypersensitive cell death. However, the mol. identity of p47 MAPK is still unclear. Recent important studies suggest that tobacco MAPK cascades that include **SIPK**, and/or **WIPK**, and NtMEK2, an upstream kinase for both **SIPK** and **WIPK**, have a crucial function in induction of defense responses and hypersensitive cell death. The orthologs of these protein kinases in Arabidopsis and alfalfa are also suggested to have similar functions. Furthermore, the identification of loss-of-function mutation in Arabidopsis reveals a neg. regulatory role

for putative MAPK cascades in **plant** defense mechanisms.

=> d 3 so

L7 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
SO Journal of Plant Research (2002), 115(1119), 237-244
CODEN: JPLREA; ISSN: 0918-9440

=> d 4 ab

L7 ANSWER 4 OF 16 AGRICOLA DUPLICATE 3
AB The activation of mitogen-activated protein kinases (MAPKs) is one of the earliest responses in **plants** challenged by avirulent pathogens or cells treated with pathogen-derived elicitors. Expression of a constitutively active MAPK kinase, NtMEK2DD, in tobacco induces the expression of defense genes and hypersensitive response-like cell death, which are preceded by the activation of two endogenous MAPKs, salicylic acid-induced protein kinase (**SIPK**) and wounding-induced protein kinase (**WIPK**). However, the roles that **SIPK** and **WIPK** each play in the process are unknown. Here we report that **SIPK** alone is sufficient to activate these defense responses. In tobacco leaves transiently transformed with **SIPK** under the control of a steroid-inducible promoter, the induction of **SIPK** expression after the application of dexamethasone, a steroid, leads to an increase of **SIPK** activity. The increase of **SIPK** activity is dependent on the phosphorylation of newly synthesized **SIPK** by its endogenous upstream kinase. In contrast, the expression of **WIPK** under the same conditions fails to increase its activity, even though the protein accumulates to a similar level. Studies using chimeras of **SIPK** and **WIPK** demonstrated that the C terminus of **SIPK** contains the molecular determinant for its activation, which is rather surprising because the N termini of **SIPK** and **WIPK** are more divergent. **SIPK** has been implicated previously in the regulation of both **plant** defense gene activation and hypersensitive response-like cell death based on evidence from pharmacological studies using kinase inhibitors. This gain-of-function study provided more direct evidence for its role in the signaling of multiple defense responses in tobacco.

=> d 9 ab

L7 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 6
AB Three protein kinases of 48, 44 and 40 kDa are activated at different stages in tobacco cells treated with fungal elicitins. Previously it was demonstrated that the rapidly activated 48 kDa protein kinase is encoded by **SIPK**. It is reported that the elicitin-activated 44 kDa kinase is encoded by **WIPK**. Activation of this kinase occurred 2-4 h after elicitin treatment and was preceded by dramatic increases in **WIPK** mRNA and protein levels. Studies using actinomycin D and cycloheximide demonstrated that de novo transcription and translation were required for this activation of the kinase activity. Strikingly, the kinetics of **WIPK** activation following elicitin treatment correlated with the onset of hypersensitive response (HR)-like cell death. Moreover, staurosporine and K-252a, two Ser/Thr protein kinase inhibitors that blocked **WIPK** activation, suppressed cell death. The timing for elicitin-treated cells to commit to a death program correlated with the appearance of high levels of **WIPK** activity. These correlative data suggest that **WIPK** may play a role during HR development in tobacco. Interestingly, a fungal cell-wall elicitor that does not cause cell death induced **WIPK** mRNA and protein to similar levels as those obsd. with the elicitins. However, no

corresponding increase in **WIPK** activity was detected. Thus, **WIPK** appears to be controlled at multiple levels.

=> d 9 so

L7 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 6
SO Plant Journal (2000), 23(3), 339-347
CODEN: PLJUED; ISSN: 0960-7412

=> d 11-16 ab

L7 ANSWER 11 OF 16 AGRICOLA DUPLICATE 8
AB A tobacco MAP kinase termed **SIPK** (salicylic acid-induced protein kinase) is activated in response to a variety of stress signals, including pathogen attack and wounding (S. Zhang and D. F. Klessig, Proc. Natl. Acad. Sci. USA 95:7225-7230, 1998; 5. Hang and D. F. Klessig, Proc. Natl. Acad.. Sci. USA 95:7433-7438, 1998). Using the yeast two-hybrid system, we have identified a gene encoding a protein that interacts with **SIPK** but not the wounding induced protein kinase (**WIPK**), which is another tobacco MAP kinase. Sequence analysis indicated that this **SIPK**-interacting protein is a member of the MAP kinase kinase family; thus, it was named **SIPK** kinase (SIPKK). Co-immunoprecipitation experiments demonstrated that SIPKK and **SIPK** interact in vitro. Consistent with its putative function as a kinase, SIPKK phosphorylated myelin basic protein in vitro. Interestingly, SIPKK was induced at the mRNA level after Tobacco mosaic virus (TMV) infection or wounding, albeit with kinetics that are too slow to account for the activation of **SIPK** following these stimuli.

L7 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2002 ACS
AB A review with 71 refs. The activation of two tobacco MAP kinases, **SIPK** and **WIPK**, by a variety of pathogen-assocd. stimuli and other stresses have been analyzed (Table 1). **SIPK** was activated by SA, a CWD carbohydrate elicitor and two elicitins from Phytophthora spp, bacterial harpin, TMV, and Avr9 from Cladosporium fulvum. In addn. to these pathogen-assocd. stimuli, wounding also activated **SIPK**, suggesting that this enzyme is involved in multiple signal transduction pathways. In all cases tested, **SIPK** activation was exclusively post-translational via tyrosine and threonine/serine phosphorylation. **WIPK** was activated by only a subset of these stimuli, including infection by TMV or harpin-producing Pseudomonas syringae and treatment with the CWD elicitor, elicitins or Avr9. In contrast to **SIPK**, **WIPK** was activated at multiple levels. Low level activation (e.g. by the CWD elicitor) appeared to be primarily post-translational whereas dramatic increases in kinase activity (e.g. by TMV or elicitins) required not only post-translational phosphorylation, but also preceding rises in mRNA levels and de novo synthesis of **WIPK** protein. Interestingly, under conditions where the same stimulus activated both of these kinases, their kinetics of activation appeared to be distinct. **SIPK** was the first to be activated. Activation of the low basal level of **WIPK** protein present before treatment exhibited similar kinetics to that of **SIPK**; however, the appearance of high levels of **WIPK** enzyme activity was delayed, perhaps reflecting the need for **WIPK** transcription and de novo protein synthesis.

L7 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 9
AB A review with 27 refs. Resistance of tomato to the leaf mold fungus Cladosporium fulvum is controlled by the interaction between a **plant**-encoded resistance gene (Cf-9) and pathogen-encoded avirulence (Avr9) gene. Our objective is to understand the underlying mol. mechanisms that transmit the Cf-9/Avr9-dependent pathogen perception

event and activate the **plant** defense response. Our approach toward the understanding of Cf-function is based on the anal. of early Cf-9/Avr9-mediated responses and signalling events. Because Cf-9 transgenically expressed in tobacco retains its specificity and activity to the Avr9 elicitor, signalling expts. were conducted in the heterologous system using these transgenic lines or derived Cf9 tobacco cell cultures. Among the earliest responses to the Avr9/Cf-9 elicitation event were rapid changes in ion-fluxes, the synthesis of active oxygen species (AOS), probably catalyzed by a **plant** NADPH-oxidase, and the transient activation of two MAP kinases. These kinases were identified as **WIPK** (wounding-induced protein kinase) and **SIPK** (salicylic-acid induced kinase) from tobacco. Studies with pharmacol. inhibitors suggested that the MAP kinases are located in an independent signalling pathway from the Avr9/Cf-9-dependent synthesis of AOS. **SIPK** and **WIPK** were involved in pathogen-related elicitation processes as well as in abiotic stress responses. This indicates that the **plant** defense is triggered via a signalling network that shares components with pathways originating from abiotic environmental stress stimuli.

L7 ANSWER 14 OF 16 CAPLUS COPYRIGHT 2002 ACS

AB Novel uses for **WIPK** , a member of the mitogen-activated protein (MAP) kinase family, are provided, based on the discovery that the **WIPK** protein is activatable in assocn. with development or enhancement of resistance to microbial pathogens. Tobacco mosaic virus infection activates a 44-kDa kinase designated **WIPK** in tobacco **plants** carrying the N resistance gene. In contrast to **SIPK** from tobacco and MAP kinases from yeast and mammals, activation of **WIPK** is preceded by a rise in mRNA levels and de novo synthesis of **WIPK** protein. Activation of **WIPK** is N resistance gene dependent, salicylic acid independent, and systemic. Wounding causes increased **WIPK** mRNA levels, but not increased **WIPK** protein levels. Thus, **WIPK** may play a crit. role in signal transduction for activation of **plant** defenses against certain microbial pathogens. Methods are disclosed for making **WIPK** transgenic **plants** with enhanced resistance to disease causing agents. In addn., transgenic **plants** transformed with **WIPK** and having enhanced disease resistance are disclosed.

L7 ANSWER 15 OF 16 AGRICOLA DUPLICATE 10

AB The Cf-9 resistance (R) gene from tomato confers resistance to the fungal pathogen Cladosporium fulvum expressing the corresponding, pathogen-derived avirulence gene product Av9. To understand how an initial R/Avr recognition event is transmitted and triggers the induction of **plant** defenses, we investigated early Avr9/Cf-9-dependent activation of protein kinases in transgenic tobacco expressing the Cf-9 gene. We identified two protein kinases of 46 and 48 kD, using myelin basic protein as substrate, that became rapidly activated in a strictly gene-for-gene manner within 2 to 5 min after Avr9 elicitation in both Cf9 tobacco **plants** and derived cell cultures. Studies with pharmacological inhibitors and effectors revealed that Ca2+ influx and a phosphorylation event(s) are required for kinase activation, but neither enzyme is involved in the Avr9-dependent synthesis of active oxygen species. The activation of both kinases is achieved via post-translational mechanisms, and the activation but not inactivation step includes tyrosine phosphorylation. Using specific antibodies, we found that the 46- and 48-kD kinases were similar to **WIPK** (for wound-induced protein kinase) and **SIPK** (for salicylic acid-induced protein kinase), two previously characterized mitogen-activated protein (MAP) kinases from tobacco. In addition, Cf9 tobacco **plants** and cell cultures showed an Avr9-dependent accumulation of the **WIPK** transcript. Cf9 tobacco suspension cultures are thus a unique system in which to analyze the earliest events in R gene function. These data indicate that (1) the R/Avr-mediated induction of **plant** defense is

accomplished via several parallel signaling mechanisms, and (2) R/Avr-dependent signal transduction pathways are interlinked at MAP kinases with responses of **plants** not only to non-race-specific elicitors but also to abiotic stimuli, such as wounding and mechanical stress.

L7 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 11
AB Salicylic acid-induced protein kinase (**SIPK**) and wounding-induced protein kinase (**WIPK**), two distinct members of the mitogen-activated protein (MAP) kinase family, are activated in tobacco resisting infection by tobacco mosaic virus (TMV). **WIPK** activation by TMV depends on the disease-resistance gene N because infection of susceptible tobacco not carrying the N gene failed to activate **WIPK**. Activation of **WIPK** required not only post-translational phosphorylation but also a preceding rise in its mRNA and de novo synthesis of **WIPK** protein. The induction by TMV of **WIPK** mRNA and protein also occurred systemically. Its activation at the mRNA, protein, and enzyme levels was independent of salicylic acid. The regulation of **WIPK** at multiple levels by an N gene-mediated signal(s) suggests that this MAP kinase may be an important component upstream of salicylic acid in the signal-transduction pathway(s) leading to local and systemic resistance to TMV.

=> d 11-16 ti

L7 ANSWER 11 OF 16 AGRICOLA DUPLICATE 8
TI Molecular cloning and characterization of a tobacco MAP kinase kinase that interacts with **SIPK**.

L7 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2002 ACS
TI Pathogen-induced MAP kinases in tobacco

L7 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 9
TI Early signalling events in the Avr9/Cf-9-dependent **plant** defense response

L7 ANSWER 14 OF 16 CAPLUS COPYRIGHT 2002 ACS
TI Pathogen-activatable MAP kinase **WIPK** to enhance disease resistance in **plants**

L7 ANSWER 15 OF 16 AGRICOLA DUPLICATE 10
TI Rapid Avr9- and Cf-9-dependent activation of MAP kinases in tobacco cell cultures and leaves: convergence of resistance gene, elicitor, wound, and salicylate responses.

L7 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 11
TI Resistance gene N-mediated de novo synthesis and activation of a tobacco mitogen-activated protein kinase by tobacco mosaic virus infection

=> d 11-16 so

L7 ANSWER 11 OF 16 AGRICOLA DUPLICATE 8
SO Molecular plant-microbe interactions : MPMI, Jan 2000. Vol. 13(1) p. 118-124
Publisher: St. Paul, MN : APS Press, [c1987-
CODEN: MPMIEL; ISSN: 0894-0282

L7 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2002 ACS
SO Results and Problems in Cell Differentiation (2000), 27(MAP Kinases in Plant Signal Transduction), 65-84
CODEN: RCLDAT; ISSN: 0080-1844

L7 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 9
SO Molecular Plant Pathology (2000), 1(1), 3-8
CODEN: MPPAFD; ISSN: 1464-6722

L7 ANSWER 14 OF 16 CAPLUS COPYRIGHT 2002 ACS
SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2

L7 ANSWER 15 OF 16 AGRICOLA DUPLICATE 10
SO The Plant cell, Feb 1999. Vol. 11, No. 2. p. 273-287
Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
CODEN: PLCEEW; ISSN: 1040-4651

L7 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 11
SO Proceedings of the National Academy of Sciences of the United States of America (1998), 95(13), 7433-7438
CODEN: PNASA6; ISSN: 0027-8424

=> s figwort mosaic virus and 35S and promoter
L8 50 FIGWORT MOSAIC VIRUS AND 35S AND PROMOTER

=> dup rem l8
PROCESSING COMPLETED FOR L8
L9 42 DUP REM L8 (8 DUPLICATES REMOVED)

=> d 42 ti

L9 ANSWER 42 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI The ocs-element is a component of the promoters of several T-DNA and plant viral genes

=> d 42 ab

L9 ANSWER 42 OF 42 CAPLUS COPYRIGHT 2002 ACS
AB The ocs-element is an enhancer element first identified in the **promoter** of the octopine synthase gene (OCS) where it occurs as a 16 bp palindromic sequence. The transcriptional enhancing activity of the ocs-element correlated with in vitro binding of transcription factor OCSTF. The identification of ocs-elements in the **promoter** regions of 6 other T-DNA genes involved in opine synthesis and 3 plant viral promoters including the **35S promoter** of cauliflower mosaic virus is reported here. These elements bind the ocs transcription factor in vitro and enhance transcription in plant cells. Comparison of the sequences of these 10 elements has defined a 20 bp consensus sequence, TGACG(T/C)AAG(C/G)(G/A)(A/C)T(G/T)ACG(T/C)(A/C)(A/C), which includes the 16 bp palindrome in its central region. The name ocs-element is proposed for this class of **promoter** elements of similar sequence and function.

=> d 41 ti

L9 ANSWER 41 OF 42 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
TI The complete sequence of soybean chlorotic mottle virus DNA and the identification of a novel **promoter**

=> d 41 ab

L9 ANSWER 41 OF 42 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
AB The complete nucleotide sequence of an infectious clone of soybean

chlorotic mottle virus (SoyCMV) DNA was detd. and compared with those of 3 other caulimoviruses, cauliflower mosaic virus (CaMV), carnation etched ring virus, and **figwort mosaic virus**. The double-stranded DNA genome of SoyCMV (8175 bp) contained 9 open reading frames (ORFs) and 1 large intergenic region. The primer binding sites, gene organization and size of ORFs were similar to those of the other caulimoviruses, except for ORF I, which was splite into ORF Ia and Ib. The amino acid sequences deduced from each ORF showed only short, highly homologous regions in several of the corresponding ORFs of the 3 other caulimoviruses. A **promoter** fragment of 378 bp in SoyCMV ORF III showed a strong expression activity, comparable to that of the CaMV **35S promoter**, in tobacco mesophyll protoplasts as detd. by a .beta.-glucuronidase assay using electrotransfection. The fragment contained CAAT and TATA boxes but no transcriptional enhancer signal as reported for the CaMV **35S promoter**. Instead, it had sequences homologous to a part of the translational enhancer signal reported for the 5'-leader sequence of tobacco mosaic virus RNA.

=> d 40 ti

L9 ANSWER 40 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI The **figwort mosaic virus** gene VI **promoter** region contains a sequence highly homologous to the octopine synthase (ocs) enhancer element

=> d 40 b
'B' IS NOT A VALID FORMAT
In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ab

L9 ANSWER 40 OF 42 CAPLUS COPYRIGHT 2002 ACS
AB In the **promoter** of the **figwort mosaic virus** gene VI, a 20-bp sequence showed homol. with the cauliflower mosaic virus **35S** enhancer. The 20-bp sequence covered the TGACG sequence which is known to interact with a transcription factor. This 20-bp sequence also showed homol. with the ocs element of plant viruses. Thus, the gene VI of **figwort mosaic virus** may be controlled by this 20-bp sequence.

=> d 30-39 ti

L9 ANSWER 30 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Use of a fungal glucose oxidase or invertase genes to increase plant resistance to pathogens

L9 ANSWER 31 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Use of maize hsp70 intron to enhance chimeric gene expression in monocots

L9 ANSWER 32 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Stimulation of plant genes with as-1 elements in their promoters with ASF-1

L9 ANSWER 33 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Solanaceae resistant to potato leafroll virus by expression of the viral coat protein gene.

L9 ANSWER 34 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI A strong **promoter** fragment from the large noncoding region of

soybean chlorotic mottle virus DNA

L9 ANSWER 35 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Control of fruit ripening and senescence in plants by expression of aminocyclopropanecarboxylic acid-metabolizing enzyme gene

L9 ANSWER 36 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Glyphosate tolerant plants carrying genes for heterologous class II 5-enolpyruvylshikimate-3-phosphate synthases

L9 ANSWER 37 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Glyphosate-tolerant plants carrying a gene for a microbial glyphosate oxidoreductase

L9 ANSWER 38 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI **Figwort mosaic virus promoter** for gene expression in transgenic plants

L9 ANSWER 39 OF 42 AGRICOLA DUPLICATE 4
TI Characteristics of a strong **promoter** from **figwort mosaic virus**: comparison with the analogous **35S promoter** from cauliflower mosaic virus and the regulated mannopine synthase **promoter**.

=> d 39 ab

L9 ANSWER 39 OF 42 AGRICOLA DUPLICATE 4
AB A segment of DNA from the genome of **figwort mosaic virus** (FMV) strain M3 possesses **promoter** activity when tested in electroporated protoplasts from, and transgenic plants of, Nicotiana tabacum cv. Xanthi nc. The 1.1 kb DNA segment, designated the '34S' **promoter**, is derived from a position on the FMV genome comparable to the position on the cauliflower mosaic virus (CaMV) genome containing the **35S promoter**. The 34S and **35S** promoters show approximately 63% nucleotide homology in the TATA, CCACT, and -18 to +1 domains, but in sequences further upstream the homology drops below 50%. **Promoter** activities were estimated using beta-glucuronidase and neomycin phosphotransferase II reporter gene systems. The activity of the 34S **promoter** segment approximates that of the **35S promoter** in both protoplast transient expression assays and in stably transformed tobacco plants. Truncation of 5' sequences from the 34S **promoter** indicates that **promoter** strength depends upon DNA sequences located several hundred nucleotides upstream from the TATA box. In leaf tissue the 34S **promoter** is 20-fold more active than the mannopine synthase (MAS) **promoter** from Agrobacterium tumefaciens T-DNA. The 34S **promoter** lacks the root-specific and wound-stimulated expression of the MAS **promoter**, showing relatively uniform root, stem, leaf, and floral activities.

=> d 38 ab

L9 ANSWER 38 OF 42 CAPLUS COPYRIGHT 2002 ACS
AB The sequence of a **figwort mosaic virus** (FMV) promoters is detd. and the **promoter** is used in expression of genes in transgenic plants. Transgenic Brassica napus contg. a glyophosate-tolerant 5-enolpyruvylshikimate-3-phosphate synthase gene linked to the FMV **promoter** were produced. The level of gene expression and uniformity of expression were superior to that when the enhanced cauliflower mosaic virus **35S promoter** was used.

=> d 21-29 ti

L9 ANSWER 21 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Transformation and sequence of novel tobacco gene Myb1 associated with enhanced disease resistance in plants

L9 ANSWER 22 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Full-length transcript (FLt) **promoter** from figwort mosaic caulimovirus (FMV) and its use to express chimeric genes in plant cells

L9 ANSWER 23 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Glyphosate-tolerant 5-enolpyruvylshikimate-3-phosphate synthases of microorganisms for herbicide tolerant plant genetic engineering

L9 ANSWER 24 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Comparison of the activities of CaMV **35S** and FMV 34S **promoter** derivatives in Catharanthus roseus cells transiently and stably transformed by particle bombardment

L9 ANSWER 25 OF 42 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
TI **Promoter**/leader deletion analysis and plant expression vectors with the **figwort mosaic virus** (FMV) full length transcript (FLt) **promoter** containing single or double enhancer domains

L9 ANSWER 26 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Virus-resistant plants transformed with a potato virus Y protease gene

L9 ANSWER 27 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI An enhancer element from the octopine synthase (OCS) gene of T-DNA that functions in monocots and dicots

L9 ANSWER 28 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Cloning of a fungal glucose oxidase and invertase genes to increase plant resistance to pathogens

L9 ANSWER 29 OF 42 AGRICOLA DUPLICATE 3
TI Sequence homology requirements for transcriptional silencing of **35S** transgenes and post-transcriptional silencing of nitrite reductase (trans)genes by the tobacco 271 locus.

=> d 29 ab

L9 ANSWER 29 OF 42 AGRICOLA DUPLICATE 3
AB The transgene locus of the tobacco plant 271 (271 locus) is located on a telomere and consists of multiple copies of a plasmid carrying an NptII marker gene driven by the cauliflower mosaic virus (CaMV) 19S **promoter** and the leaf-specific nitrite reductase Nii1 cDNA cloned in the antisense orientation under the control of the CaMV **35S promoter**. Previous analysis of gene expression in leaves has shown that this locus triggers both post-transcriptional silencing of the host leaf-specific Nii genes and transcriptional silencing of transgenes driven by the 19S or **35S promoter** irrespective of their coding sequence and of their location in the genome. In this paper we show that silencing of transgenes carrying Nii1 sequences occurs irrespective of the **promoter** driving their expression and of their location within the genome. This phenomenon occurs in roots as well as in leaves although root Nii genes share only 84% identity with leaf-specific Nii1 sequences carried by the 271 locus. Conversely, transgenes carrying the bean Nii gene (which shares 76% identity with the tobacco Nii1 gene) escape silencing by the 271 locus. We also show that transgenes driven by the **figwort mosaic virus** 34S

promoter (which shares 63% identity with the **35S promoter**) also escape silencing by the 271 locus. Taken together, these results indicate that a high degree of sequence similarity is required between the sequences of the silencing locus and of the target (trans) genes for both transcriptional and post-transcriptional silencing.

=> d 11-19 ti

L9 ANSWER 11 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Increasing the efficiency of photosynthetic carbon fixation in plants by increasing bicarbonate uptake

L9 ANSWER 12 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Detection of **Figwort mosaic virus** **35S promoter** in genetically modified roundup-tolerant rapeseed

L9 ANSWER 13 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Transgenic plants expressing genes for enzymes of methionine biosynthesis showing improved tolerance of stress conditions

L9 ANSWER 14 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Enzymes acylating phosphonates and the genes encoding them and the development of phosphonate herbicide resistant plants

L9 ANSWER 15 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI **Figwort mosaic virus** 34S **promoter** and uses

L9 ANSWER 16 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI cDNA sequences encoding a spring leaf form of pokeweed antiviral protein (PAP') and variant, and uses thereof to engineer potato plants that are resistant to viral infection

L9 ANSWER 17 OF 42 AGRICOLA DUPLICATE 1
TI Agrobacterium-mediated transformation of the commercially important grapefruit cultivar Rio Red (Citrus paradisi Macf.).

L9 ANSWER 18 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Arabidopsis DNA encoding a Mg2+, Zn2+/H+ exchanger, and transgenic plants with enhanced stress tolerance

L9 ANSWER 19 OF 42 CAPLUS COPYRIGHT 2002 ACS
TI Glyphosate as a gametocide for the generation of male-sterile plants

=> d 12 ab

L9 ANSWER 12 OF 42 CAPLUS COPYRIGHT 2002 ACS
AB The sequence homogeneity among **Figwort mosaic virus** (FMV) **35S**, FMV 34S and CaMV **35S** promoters was analyzed, and the FMV **35S promoter** was detected from genetically modified Roundup-tolerant rapeseed by PCR with a pair of specific primers. The FMV **35S promoter** was detected out from 7 shipment of rapeseed imported from Canada.

=> d 12 so

L9 ANSWER 12 OF 42 CAPLUS COPYRIGHT 2002 ACS
SO Shengming Kexue Yanjiu (2001), 5(3), 225-229
CODEN: SKYAFL; ISSN: 1007-7847

=> s figwort mosaic virus 35S promoter
L10 10 FIGWORT MOSAIC VIRUS 35S PROMOTER

=> dup rem l10
PROCESSING COMPLETED FOR L10
L11 10 DUP REM L10 (0 DUPLICATES REMOVED)

=> d 1-10 ti

L11 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Protein and cDNA sequences of a novel insecticidal endotoxin protein CRY from Paecilomyces farinosus

L11 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Protein and cDNA sequences of a novel insecticidal and nematicidal protein from Xerocomus chrysenteron

L11 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Detection of **Figwort mosaic virus 35S promoter** in genetically modified roundup-tolerant rapeseed

L11 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Glyphosate as a gametocide for the generation of male-sterile plants

L11 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Pathogen-activatable MAP kinase WIPK to enhance disease resistance in plants

L11 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Transformation and sequence of novel tobacco gene Myb1 associated with enhanced disease resistance in plants

L11 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Virus-resistant plants transformed with a potato virus Y protease gene

L11 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI An enhancer element from the octopine synthase (OCS) gene of T-DNA that functions in monocots and dicots

L11 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Solanaceae resistant to potato leafroll virus by expression of the viral coat protein gene.

L11 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS
TI Glyphosate-tolerant plants carrying a gene for a microbial glyphosate oxidoreductase

=> d 10 ab

L11 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS
AB A gene encoding a microbial glyphosate oxidoreductase is expressed in plant tissue for the generation of glyphosate-tolerant plants. The gene, or a synthetic allele, expressed from a strong plant virus promoter, was introduced into tobacco leaf disks by Agrobacterium, and plants were regenerated. Tissue from regenerated plants was recallused in the presence of glyphosate and assayed for glyphosate reductase protein by Western blot. Callus was regenerated on a glyphosate-contg. medium by 11 of 45 plants; 24 of 45 had glyphosate oxidoreductase protein on Western blots at 0.5-2 ng enzyme/50 .mu.g protein. These plants were also resistant to spraying with glyphosate at 0.4 and 1.0 lb/acre. Methods for increasing levels of expression and the expression of the gene in other

crop plants were also demonstrated.

=> d 10 kwic

L11 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS
IT Deoxyribonucleic acid sequences
(of genes for glyphosate oxidoreductase and analogs of microorganism LBAA and of **figwort mosaic virus** **35S promoter**)

=> d 10 so

L11 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS
SO PCT Int. Appl., 143 pp.
CODEN: PIXXD2

=> d 10 pi

L11 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9200377	A1	19920109	WO 1991-US4514	19910624
	W: AU, CA, JP, SU				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	CA 2083948	AA	19911226	CA 1991-2083948	19910624
	AU 9184085	A1	19920123	AU 1991-84085	19910624
	AU 655197	B2	19941208		
	EP 536330	A1	19930414	EP 1991-915131	19910624
	EP 536330	B1	20020227		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 05508776	T2	19931209	JP 1991-514046	19910624
	JP 3173784	B2	20010604		
	RU 2168544	C2	20010610	RU 1992-16544	19910624
	JP 2001197842	A2	20010724	JP 2000-345501	19910624
	AT 213774	E	20020315	AT 1991-915131	19910624
	US 5463175	A	19951031	US 1995-391339	19950221
	US 5776760	A	19980707	US 1995-484274	19950607

=> d 9 ab

L11 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2002 ACS
AB Methods for improving the resistance of potato to infection by potato leaf roll virus (PLRV) are described. The method involves expression of the gene for the viral coat protein in the plant. Levels of protection and efficiency of expression are increased by elimination of out-of-frame translation initiation codons and improving the efficiency of the translation termination signal. The gene is placed under control of a strong promoter, e.g. the **figwort mosaic virus** **35S promoter**, to ensure high levels of expression. The gene was modified by std. methods and introduced into potato callus by Agrobacterium, and transgenic plants regenerated. Lines developed from these transformants, challenged with PLRV, had greater resistance to the virus than those transformed with the unmodified gene.

=> d 9 pi

L11 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2002 ACS

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI	EP 531273	A2	19930310	EP 1992-870141	19920902
	EP 531273	A3	19930324		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	US 5304730	A	19940419	US 1991-753738	19910903
	CA 2077405	AA	19930304	CA 1992-2077405	19920902
	CA 2077405	C	19990323		

=> d 8 ab

L11 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2002 ACS
AB A DNA sequence common to the octopine synthase gene and six other genes of T-DNA has been identified as an enhancer element that functions in monocotyledonous and dicotyledonous plants. The element has one or two sequence domains and binds the ocs transcription factor. The element is conserved in tobacco and maize and is also found in the cauliflower mosaic virus 35S promoter. The element was identified by its effect on the level of expression from the maize adh1 promoter. After narrowing the function down to a 16 base-pair palindromic sequence, the role of the sequence was confirmed using a synthetic sequence. The stimulatory effect was somewhat insensitive to distance from the promoter. The element plays in a role in wound induction of gene expression.

=> d 8 so

L11 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2002 ACS
SO U.S., 43 pp., Cont.-in-part of U.S. Ser. No. 11,614,abandoned.
CODEN: USXXAM

=> d 7 ab

L11 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS
AB An isolated DNA sequence which codes for the potyvirus, potato virus Y (PVY), protease gene is disclosed. Resistance to infection is provided by a virus by expressing a protease gene in plants, and transgenic potato plants and tubers contg. the protease gene are also disclosed.. Thus the DNA coding sequence for the PVY protease gene was engineered into pMON17227, which is a double border plant transformation vector, to study its ability to confer resistance to PVY in plants expressing the protease gene. The resulting plasmid pMON18677 carries the coding region of the protease under the control of the figwort mosaic virus (FMV) 35S promoter, and addnl. contains the bacterial spectinomycin/streptomycin resistance gene, the synthetic bacterial glyphosate resistance CP4 5-enoylpyruvyl-3-phosphoshikimate synthase gene driven by the FMV promoter and fused to a chloroplast transit peptide from Arabidopsis, and the E9 3' region from the pea small subunit RUBISCO gene. Potatoes were transformed using glyphosate as a selectable agent via Agrobacterium-mediated transformation. Protease-expressing potato lines were almost completely resistant to infection by PVY.

=> d 7 pi

L11 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5589612	A	19961231	US 1993-148022	19931104

=> d 6 ab

L11 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2002 ACS

AB An isolated nucleic acid mol. is provided which encodes a tobacco myb homolog (Myb1) involved in the regulation of disease resistance in plants. The gene is induced by tobacco mosaic virus infection. The encoded protein comprises a basic N-terminal region with two imperfect tryptophan repeats of 53 and 51 amino acids, a potential ATP/GTP-binding site or P-loop, a redox sensitive cysteine and a nuclear localization sequence. The acidic C terminus of Myb1 forms amphipathic .alpha. helixes which are characteristic of transcriptional activation domains. The protein functions as a signaling component downstream of salicylic acid where it participates in transcriptional regulation of plant defense responses. Myb1 genes are cloned on vectors along with 35S genetic promoters from either cauliflower mosaic or figwort mosaic viruses. The invention also provides novel Myb1 protein and antibodies thereto. Addnl., the invention provides novel transgenic plants with enhanced disease resistance to certain pathogens.

=> d 5 pi

L11 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9943796	A1	19990902	WO 1999-US3882	19990223

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

	AU 9927819	A1	19990915	AU 1999-27819	19990223

=> d 5 kwic

L11 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS
IT Cauliflower mosaic virus
Figwort mosaic virus
(**35S promoter** for use in nucleic acid vectors;
pathogen-activatable MAP kinase WIPK to enhance disease resistance in plants)

=> s fmv 35S promoter
L12 2 FMV 35S PROMOTER

=> d 1-2 ti

L12 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
TI Detection of Figwort mosaic virus 35S promoter in genetically modified roundup-tolerant rapeseed

L12 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
TI Virus-resistant plants transformed with a potato virus Y protease gene

=> d 2 ab

L12 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS
AB An isolated DNA sequence which codes for the potyvirus, potato virus Y (PVY), protease gene is disclosed. Resistance to infection is provided by a virus by expressing a protease gene in plants, and transgenic potato

plants and tubers contg. the protease gene are also disclosed.. Thus the DNA coding sequence for the PVY protease gene was engineered into pMON17227, which is a double border plant transformation vector, to study its ability to confer resistance to PVY in plants expressing the protease gene. The resulting plasmid pMON18677 carries the coding region of the protease under the control of the figwort mosaic virus (**FMV**) **35S promoter**, and addnl. contains the bacterial spectinomycin/streptomycin resistance gene, the synthetic bacterial glyphosate resistance CP4 5-enoylpyruvyl-3-phosphoshikimate synthase gene driven by the FMV promoter and fused to a chloroplast transit peptide from Arabidopsis, and the E9 3' region from the pea small subunit RUBISCO gene. Potatoes were transformed using glyphosate as a selectable agent via Agrobacterium-mediated transformation. Protease-expressing potato lines were almost completely resistant to infection by PVY.

=> d 2 pi

L12 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5589612	A	19961231	US 1993-148022	19931104